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BY

States Government

Department of Energy

Memorandum

Rocky Flats Office

JAN 28 1992

ERD:BKT:0773

DOE Comments on "Public Health Risk Assessment, 881 Hillside Area, Operable Unit No. 1, Technical Memorandum No. 6, Exposure Scenarios, Revision 1.0," dated January 1991

J. M. Kersh, Associate General Manager
Environmental Restoration and Waste Management
EG&G Rocky Flats, Inc.

Please find attached DOE/RFO/ERD comments on the RFP document entitled "Public Health Risk Assessment, 881 Hillside Area (OU-1), Technical Memorandum No. 6, Exposure Scenarios, Revision 1.0," dated January 1991. The first comment is that 1991 should be changed to 1992 on the cover page. Note that these written comments were presented at meeting between DOE and EG&G held on January 16, 1992, at the RFP. This memorandum is a follow-up to that meeting.

This document was not completely modified per the recommendations of DOE at a meeting held on December 18, 1991, and was not modified per the recommendations of DOE, EPA, and CDH at a meeting held on December 19, 1991. In the future, EG&G should prepare meeting minutes for DOE review (and EPA and CDH review).

We request that consideration be given to these comments. Responses to DOE/RFO/ERD comments should accompany the next revision of this document so that a determination can be made regarding the adequacy of responses prior to delivery of the revised document to EPA and CDH. Finally, we request that EG&G prepare meeting minutes promptly (within a week) after meetings with DOE, EPA, and CDH.

Questions or concerns regarding the attached comments should be directed to Bruce Thatcher of my staff at extension 3532.

David P. Simonson
Assistant Manager
for Environmental Management

Attachments

A-OU01-000777

cc w/Attachments:
F.Lockhart, ERD, RFO
R. Schassburger, ERD, RFO
S. Grace, ERD, RFO
B. Thatcher, ERD, RFO
D. Smith, EG&G

LOCATION	COMMENTS
p. i, 3rd line	Briefly state what is "typical".
p. i, par. 1	Delete 3rd sentence or make more specific to RFP.
p. i, par. 1, 4th sentence	Revise. Gives a false picture of exposed population.
p. i, par. 2	Revise. State the scenarios to be assessed quantitatively, and specify whether they are credible or plausible. State the scenario to be evaluated qualitatively and discuss why it is considered to be non-credible. The former scenarios include current residential offsite, future ecological reserve onsite, future commercial/industrial onsite and future residential offsite. The latter scenario is future residential onsite and is presented so as to comply with the NCP.
p. 1, Sec. 1.1, line 5	Specify exact location in the IAG.
line 6	Future residential land use is non-credible.
line 10	Specify exact location in the IAG.
p. 1, Sec. 1.2, line 2	Replace "relevant" with "complete" and replace "selecting" with "identify".
line 3	Replace "expected" with "non-credible".
p. 1, Sec. 1.2, last sentence	Delete.
p. 1, Sec. 1.2	Define credible, plausible vs. non-credible in text.
p. 2, Sec. 2.1, par. 2, line 1	Replace "airflow" with "wind pattern".
p. 2, Sec. 2.1, par. 2	State that the wind rose diagram in Figure 2-1 is from the upland area of the RFP and may not apply to the Woman Creek drainage. Also state that there is no micrometeorological data for the Woman Creek Drainage.
p. 2, Sec. 2.1, par. 2, line 5	Replace "between 7 and" with "up to".
p. 2, Sec. 2.1, par. 2, line 6	Insert "and south" between "southeast" and "of RFP".
p. 2, Sec. 2.2, line 4	Delete "outcrop".

p. 5, line 1	Insert "hydraulic" before "connection".
p. 5, par. 2, line 7	Delete "shallow subcropping" and "bedrock". Insert "of the Arapahoe formation" after "claystone".
p. 5, par. 2, lines 9 and 11	Replace "consumed by" with "subjected to".
p. 6, par. 1, line 3	Delete "Front Range". Insert "along the Front Range" after "activities".
line 4	Replace "overgrazing" with "grazing". Delete "also".
p. 6, par. 3, 2nd sentence	Delete.
p. 6, par. 3, line 4	Delete "findings of".
p. 7, Sec. 3.1	Highlight DRCOG study and reference DOE study as necessary.
p. 7, Sec. 3.1, par. 1, last line	Replace with "into the future". Also, reference extrapolation period in DRCOG study.
p. 7, Sec. 3.1, last sentence	Delete "according to U.S. Department of Energy".
Figure 3-1	Indicate absence of sensitive subpopulations.
Figure 3-2	Shade sectors E through I.
p. 12, Sec. 3.2	Include a figure of a map with the current land use. Discuss and dismiss, if appropriate, current offsite agricultural and commercial/industrial land use.
p. 12, Sec. 3.2, par. 1, line 4	Delete. Does not apply to current conditions.
line 5	Replace "may include any of " with "includes".
p. 12, Sec. 3.2, par. 2, line 4	Replace "retail, office, or industrial" with "commercial/industrial".
P. 13, Sec. 3.3, line 8	Define compliance screening assessment in text. This is already in Appendix A.

p. 13, tabular section	Put in a table.
	State in table the pCi/g refers to soil concentration.
	Change to 5000mrem/yr
p. 14, tabular sections	See comments regarding p. 13, tabular section.
p. 15, par. 2,	Define "mission" in the text.
	Get incidence reports of intruders from WSI. State incidence per year in text.
p. 16, Sec. 3.5, par. 1, sentence 1	Acknowledge SWEIS implementation plan and state alternatives considered.
p. 16, Sec. 3.5, par. 1, line 10	Replace "cutover" with "transition".
line 13	Delete "probably".
p. 16, Sec. 3.5, par. 2, line 3	Replace "acquired " by "purchased by Atomic Energy Commission (AEC) from private ownership".
	After first sentence, insert "It is the responsibility of DOE, as federal land manager, to provide for and determine future land use at the RFP"
p. 17, lines 2 and 3	Delete quotes.
	Replace "it is the U.S. Department of Energy's intent" with "it is the U.S. Department of Energy's policy".
p. 17, par. 2, line 5	Insert "restricted" before "use by the public".
p. 17, par. 3, line 3	Replace "likely" with "credible".
p. 17, 1st bullet	State that this scenario is credible. Explain why in text.
p. 17, 2nd bullet	State that this scenario is plausible. Explain why in text.
p. 18, line 2	Add air and sediments.
p. 16, Sec. 3.5	Contrast exposure of research biologist with that of commercial/industrial worker and hiker.
p. 19, Sec. 4.0	Include discussion of future onsite residential land use. State that the assessment will be qualitative along with the reasoning.

Table 4-1	Include recreational land use as a scenario.
	Replace yes and no with credible, plausible or non-credible.
	Add footnote indicating either quantitative assessment, qualitative assessment or dismissal from assessment.
p. 21, Sec. 4.2	Separate quantitative and qualitative assessments.
p. 22, Sec. 4.2.1, line 2	Replace "community" with "and riparian ecosystems".
p. 22, Sec. 4.2.1, lines 3 and 4	Replace "ecological reserve" with "greenbelt or open space".
p. 23, Sec. 4.2.2, line 2	Replace "plans to use the site as" with "believes the credible use to be".
	Replace "possible" with "plausible".
p. 25, Sec. 5.0	Separate quantitative and qualitative assessments.
p. 25, par. 2, 2nd sentence	Delete and replace with a Table of contaminants.
p. 25, par. 2, line 6	Delete "soil movement by mechanical disturbance".
Figure 5-1	Delete soil box to the immediate right of external radiation.
	Change all N/A's to N's.
p. 28, Table 5-1	Change No to Yes for ingestion of surface water to be consistent with Yes for ingestion of sediments.
p. 29, par. 3	State the complete future pathways in the text. Referring to the table is inadequate.
p. 39, Sec. 6.0	Revise per changes in text. Include credible, plausible and non-credible. Include quantitative and qualitative.
p. 39, Sec. 6.0, line 2	If retained, replace "minimizes" with "helps to reduce".
Appendix B	Include results of findings at State Engineer's Office regarding sources of water in the vicinity of the RFP. Should also consider questioning local residents if records do not exist at State Engineer's Office.

SYSTEMATIC
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19 December 1991

Fraser R. Lockhart, Director
Environmental Restoration Division
Department of Energy
Rocky Flats Office
Golden, CO 80402-0928

Re: Revised Draft Public Health Risk Assessment: OU-1; December 1991

There are DOE strategic questions which need to be addressed and the answers communicated to the Contractor quickly, in order for the revision of this Technical Memo to satisfy IAG requirements and DOE assessment needs (as well as CERCLA/NEPA integration needs). These are:

1. Is it appropriate to provide a site-wide risk assessment, environmental evaluation and conceptual model framework for the entire series of OU assessments?

   Yes, the IAG calls for DOE to do so if it so chooses and I would strongly suggest that doing so would (1) make the OU specific efforts more focused and less redundant, (2) provide a more rigorous scientific basis for the risk assessment, environmental evaluation, and FS efforts, (3) allow efficient dovetailing of the assessments as a baseline risk evaluation into the SWEIS (required by EH-25) as well as OU specific FS/EA integration.

   The document as presented is generic to the site and not specific to OU-1 except for the description of the physical environment. Reframing the technical memo to address the two tiers: (1) site wide and (2) OU-1 would increase clarity and minimize redundant efforts (and resulting redundant comments from the regulators).

2. As the lead CERCLA agency, should DOE define the future use scenarios and provide DP and EM policy guidance, rationale from the Reconfiguration PEIS, the ERWM PEIS as boundaries, and analysis of "reasonably foreseeable" future use scenarios?

   Yes, within the framework of the CERCLA regulations, DOE has the responsibility to define reasonable future uses which are not arbitrary or

simply a reflection of the regulators' suggestions based on public perceptions or wishes. DOE should provide the guidance for development of the future use scenarios at the site wide level.

3. Should DOE define a hierarchy of risk assessment efforts including quantitative, qualitative, and minimal (general order of magnitude) for the future use analyses based on the capability of the organization to (1) provide appropriate input data, (2) the likelihood of the specific future use scenario, and (3) the meaningfulness of specific pathways for exposure?

Yes, while the NCP and CERCLA guidance requires that future residential use be considered there is no requirement that all future use scenarios be equally treated. Resources should be applied to the more rigorous evaluation of credible future use scenarios, even for the baseline assessment.

Recommendation for Revision:

1. If separate documents for site wide and OU-1 are not preferred then provide a two section document: the first addressing site wide scenarios and exposure pathways and the second focusing on unique considerations of OU-1.

2. Provide a definitive background of information on the current circumstances; specifically:

current and projected land uses in the area

current water wells: uses, locations, depths, quality, yield

current occupational medical surveillance and monitoring results for workers (classifications including those on work permits for process areas, etc, but also those occasionally exposed, such as the security force)

summary of on-site and fenceline maximum concentrations for "probable COCs"

3. Examine the following scenarios for quantitative assessment:

	on site	off site
Current	occupational	residential
Future	ecol. reserve comm/ind	residential

Provide rationale for not modeling but using current data for occupational force; provide rationale for not considering open space

4. Examine the following qualitatively:

Future	on-site homestead (family of 4)

Provide rationale of why not credible; assess on the basis of groundwater pathway being negligible by lack of yield in Alluvium and Arapahoe formations; examine only on qualitative basis

5. Distinguish between the contact time for reserve researcher and resident with respect to surface water and soil

6. Use 15 yrs ops; 35 yrs D&D; and 30 yrs controls per CERCLA as future use timeframe set

7. Provide as discussion the 1972 Environmental Statement and information regarding Reconfiguration, ERWM activities, and future use policies of the DOE (I'll help on this as possible with HQ) to provide the context for the assessment

8. Move the Summary to the front of the document.

9. Include on Figure 3-1 locations of sensitive facilities

Sincerely,

Beverly S. Ausmus, PhD

17 January 1991

Fraser R. Lockhart, Director
Environmental Restoration Division
Department of Energy
Rocky Flats Office
Golden, CO 80402-0928

Re: Confirmation of Verbal Comments: Review of Technical Memorandum 6: Public Health Risk Assessment OU-1: Working Draft 1/15/92

Dear Fraser:

I have summarized below the substantive comments made to Dennis Smith, EG&G regarding the referenced document. My recommendation is that DOE not submit this document until the methods identified for assessment are rigorously supported. The DOE should, in my opinion, be aggressive in its presentation of credible, plausible and incredible future land uses. The public needs to be aware of DOE's long term commitment to manage its inventory of wastes. Conversely, DOE must comply with the NCP which requires analysis of residential use in the future. By doing this analysis qualitatively and defining the land use as incredible for the secured area, DOE can provide both the analysis and a more technically rigorous analysis of current and future risks on the credible scenarios.

1. Summary

This is a descriptive abstract. Please redraft as a summary of objective, findings and conclusions.

2. Section 1.1

Please reference the IAG section referred to in the section. The purpose should be specific to OU-1 not generic as it currently reads.

Fraser Lockhart
21 January 1992

OU-1 Technical Memo 6 Working Draft January 1992

3.Section 1.2

The concept of credible, plausible and incredible future land uses should be introduced here.

4. Section 2.1

Care should be taken here since we do not have micrometeorological data which support the information developed pn OU-1

5. Section 2.4

Delete the last paragraph and a paragraph written addressing the relationship between EE and PHE

6. Section 3.1

This section should be beefed up to show on figures that there are no sensitive facilities within 5 miles; and topical sentences to paragraphs are positive: e.g. few people close, lots far away. The current wording and order of information makes it sound as if we're putting more than 2 million people at risk.

7. Figure 3-2

Show on diagram the influenced sectors for OU-1. Add I based on the wind rose. Add I also in text and Table 3-1.

8. Section 3.2

The maps referenced are planning not current use. Provide current land use map. I don't believe we can dismiss agriculture or any other land use if it shows up on the current land use maps.

9. Section 3.3

Define "compliance screening assessment" and cite its authority. EPA will not be familiar with that terminology.

Make the text-inserted tables real tables. The use of 0.19 mrem/year/9 pCi/g

will be very confusing to regulators. Write out what the 9 pCi/g means in a table footnote or make these values the last entry in the columns of the table so heading will define the value and units.

Put MPD in same units as the earlier entries.

10. Section 3.5

Include the SW EIS in this discussion.

Use production "transition" rather than "cutover" for clarity.

Strengthen this section to support the use of credible, plausible and incredible classifications of future land uses for the buffer area and secured areas of the plant.

Note that DOE (predecessor agency) bought the land in two increments from private ownership -- the land was not ceded by local government.

Make the case that DOE is the land manager responsible for the determination of future land use. The statement at the top of page 17 "intent" should probably be policy.

Identify the land uses as plausible, credible, etc as they are discussed. For each identified, provide rationale for classification and define whether it is taken further into Section 4

11. Table 4-1 Redraft:

identify heading as "land use classification or category"

add recreational land use

recast using credible, plausible etc. and provide a second table which lists types of analysis to be furnished: none, quantitative or qualitative

12. Section 4.2.1

correlate preserve with greenbelt or open space defined in the EA, historically.

Fraser Lockhart
21 January 1992

OU-1 Technical Memo 6 Working Draft January 1992

13. Section 5.0

Identify COCs in table

Organize section into quantitative and qualitative analyses sections and then prepare the discussion of those scenarios

14. Figure 5-1

delete soil box following External Radiation

NA should represent only those pathways which are BLOCKED; many of these or all should be marked negligible not NA

15. Table 5-1

Offsite resident: H_2O Ingestion-- if sediment can be ingested then water can be ingested

16. Section 5.1 last paragraph:

Under Table 5-2 add These are: ...

17. Table 5-3 page 35

It makes no sense, referenced or not that soil ingestion for a 10 year old is less than that of an adult -- can't we find a more rational reference?

Matrix factor needs to de defined in a footnote.

18. Appendix 2

There must be information on the source of water currently in use in the Sector potentially affected. Either find it from local public health department or survey land owners but do not leave this information out. It is critical to building the lack of quantity case for agriculture and residential uses of the on-site areas.

Beverly S. Ausmus